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WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

STOYNOV, STEFAN

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2116

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/796,203	Applicant(s) KATO ET AL.	
	Examiner Stefan Stoykov	Art Unit 2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-13 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06/09/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 11 recites a program without its corresponding computer readable medium for storing the program. Similarly, for claim 12, there is no computer readable medium storing the program product even though the claim recites a "signal holding medium for holding the program". The signal holding medium is not limited to tangible medium. Further, claim 13 defines the signal holding medium being an intangible transmission medium (i.e. Specification, page 6, lines 14-15). As such, claim 13 is directed towards intangible medium. Thus, the subject matter of claims 11-13 is directed to non-statutory subject matter.

One way to overcome this rejection is to insert the phrase "stored in a computer readable medium" after the limitations "A program" and "A program product" in line 1 of claims 11 and 12, respectively. In addition, it is suggested to remove the phrase "and a signal holding medium for holding the program" from claim 12 and cancel claim 13.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 and 8-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Odaohhara et al., US Patent No. 6,574,740. Odaohhara shows the claim limitations in Figures 1-9.

Regarding claim 1, Odaohhara discloses a power-save computing apparatus (FIG. 1), comprising a device information administrator (power controller 47, FIG. 1, column 7, lines 29-44) for detecting a fluctuation in a total consumed power of one or more power-consuming devices (column 2, line 60 – column 3, line 5, column 5, line 60 – column 6, line 2), determining a consumed power to be changed so as to suppress the fluctuation (column 4, line 49 – column 5, line 6, column 9, line 51 – column 10, line 8, FIG. 3), and outputting the determined consumed power to be changed (column 5, lines 13-16, column 6, lines 2-5, column 10, lines 9-61, FIG. 4).

Regarding claim 2, Odaohhara further discloses the apparatus, further comprising:

a power-save determinator (ACPI in OS in combination with ASL within BIOS) for generating and outputting a control command for at least one of the one or more devices so that the total consumed power changes in accordance with the consumed power to be changed outputted from the device information administrator (column 13, lines 6-19), and

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a device controller (PCI device 33, FIG.1) for controlling the at least one device in accordance with the control command outputted from the power-save determinator (column 13, lines 13-28).

Regarding claim 3, Odaohhara further discloses the apparatus, as per claim 2, wherein the power-save determinator possesses a rule for converting the consumed power to be changed into a control command for each of the one or more devices, and the power-save determinator generates and outputs the control command to the at least one device in accordance with the rule.

[Inherently disclosed because in order for the ACPI aware OS (i.e. an OS containing and operating according to power-saving rules) interacting with the ASL within the BIOS, and based upon that interaction, determining whether to change the operational mode of the CPU (i.e. the CPU's power consumption) by issuing a command to the PCI device 33 (i.e. the controller) for adjusting the CPU's operational mode, the power-save determinator must necessarily convert the power-saving rules into a control command and output such command, as explained above – column 13, lines 6-28].

Regarding claim 4, Odaohhara further discloses the apparatus, as per claim 3, further comprising a storage (ACPI software executed out of main memory 19 – column 7, lines 1-4, and ASL code stored within system ROM – column 13, lines 10-12) for storing a rule for converting a rule for converting the consumed power to be changed into a control command (column 13, lines 6-28) for a device addable to the one or more devices (column 4, lines 13-16), wherein the device information administrator causes the power-save determinator to possess the rule stored in the storage in correspondence

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with the added device if the addable device is added to the one or more devices

(column 8, lines 52-61, column 12, lines 20-27, lines 45-51, line 59 – column 13, line 28, FIG. 7).

Regarding claim 8, Odaohhara further discloses the apparatus as per claim 2, wherein the device information administrator holds a changing pattern of a consumed power of each of the one or more devices or a changing pattern of the total consumed power of the one or more devices (column 12, lines 27-45); predicts a future value of the total consumed power based on any one of the patterns and detection results of a fluctuation in the total consumed power of the one or more devices (column 2, line 60 – column 3, line 5, column 5, line 60 – column 6, line 2, column 12, lines 45-67); and determines and outputs the consumed power to be changed so as to suppress a future fluctuation in the total consumed power (column 4, line 49 – column 5, line 6, lines 13-16, column 6, lines 2-5, column 9, line 51 – column 10, line 61, FIG(s). 3 and 4, column 12, lines 20-24, lines 45-51, column 13, lines 35-47).

Regarding claim 9, Odaohhara further discloses the apparatus as per claim 2, wherein the power-save computing apparatus is included in the one or more devices (FIG. 1).

Regarding claim 10, Odaohhara discloses a power-save method, comprising the steps of:

determining a fluctuation in a total consumed power of one or more power-consuming devices (column 2, line 60 – column 3, line 5, column 5, line 60 – column 6, line 2),

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determining a consumed power to be changed so as to suppress the detected fluctuation in the total consumed power (column 4, line 49 – column 5, line 6, column 9, line 51 – column 10, line 8, FIG. 3, column 12, lines 20-24, lines 45-51),

generating a control command for at least one of the one or more devices so that the total consumed power changes in accordance with the determined consumed power to be changed (column 12, line 59 – column 13, line 12), and

controlling the at least one device in accordance with the generated control command (column 13, lines 13-28).

Regarding claim 11, Odaohhara discloses a program (column 7, lines 34-38) for causing a computer to realize:

a function of detecting a fluctuation in a total consumed power of one or more power-consuming devices (column 2, line 60 – column 3, line 5, column 5, line 60 – column 7, line 2), and

a function of determining a consumed power to be changed so as to suppress the detected fluctuations in the total consumed power (column 4, line 49 – column 5, line 6, column 9, line 51 – column 10, line 8, FIG. 3).

Regarding claim 12, Odaohhara discloses a program product, comprising:

a program (column 7, lines 34-38) for causing a computer to realize a function of detecting fluctuation in a total consumed power of one or more power-consuming devices (column 2, line 60 – column 3, line 5, column 5, line 60 – column 7, line 2), and a function of determining a consumed power to be changed so as to suppress the detecting fluctuations in the total consumed power (column 4, line 49 – column 5, line 6, column 9, line 51 – column 10, line 8, FIG. 3), and

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a signal holding medium for holding the program (ROM within power controller 47, column 7, lines 34-38, column 12, lines 20-24).

Regarding claim 13, Odaohhara further discloses the program product, wherein the signal holding medium is at least one of a storage medium and a transmission medium (column 7, lines 34-38, column 12, lines 20-24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Odaohhara et al., US Patent No. 6,574,740 in view of Umetsu, US Patent No. 6,498,957. Umetsu shows the claim limitations in Figures 1-7.

Regarding claim 5, Odaohhara discloses the apparatus as per claim 2.

Odaohhara fails to disclose the device controller has a controlled state administration table carrying information on a content of operation and a permissible

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operation range for each of at least some of the one or more devices, and, if some content of operation exceeds the permissible range, then prohibits the power-save determinator from outputting the control command corresponding to the some content of operation.

Umetsu teaches a controller utilizing a first table (FIG. 1, 12-1) identifying the power source attached to a portable personal computer and its power capacity (column 2, lines 24-26, FIG. 2) and a second (power dependent operation table – FIG. 1, 12-2) storing the power quantities required for operating each of the peripheral units (each peripheral performing specific function – Abstract, lines 5-7, column 2, lines 2-4) attached to the portable personal computer (column 2, lines 26-28, FIG. 3, column 4, lines 29-36). In addition, Umetsu further teaches, the controller referring to the first and second table and selectively outputting switching control signals (i.e. control command) for different peripherals to whether to operate or not each of the attached peripherals based on pre-established power ranges corresponding to the attached power sources (column 2, lines 28-45, column 4, lines 4-20, line 50 – column 5, line 18). In Umetsu, the power regulation is done dynamically with regards to the operation of externally attached peripherals requiring extra power (column 2, lines 34-36, column 2, line 63 – column 3, line 7). Thus, effective power utilization in the portable personal computer is achieved (column 1, lines 20-26).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the above described tables stored within the controller used for outputting command to selectively enable or disable the operation of different peripheral devices based on the power capability of the computer's power source, as

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suggested by Umetsu with the apparatus disclosed by Odaohhara in order to implement the device controller has a controlled state administration table carrying information on a content of operation and a permissible operation range for each of at least some of the one or more devices, and, if some content of operation exceeds the permissible range, then prohibits the power-save determinator from outputting the control command corresponding to the some content of operation. One of ordinary skill in the art would be motivated to do so in order to achieve effective power utilization for the apparatus.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Odaohhara et al., US Patent No. 6,574,740 in view of Goodnow et al., US Patent No. 6,167,524. Goodnow shows the claim limitations in Figures 1-4.

Regarding claim 7, Odaohhara discloses the apparatus as per claim 2. In addition, Odaohhara further discloses wherein a battery as a power source for supplying a power to the one or more devices is connected to the one or more devices (FIG. 1, 59 and 60), and upon detecting a fluctuation in the total consumed power in decreasing direction, the device information administrator generates and outputs the consumed power to be changed (column 9, lines 51-59, FIG. 3).

Odaohhara fails to disclose the consumed power to be changed only when a power-saving effect for a battery when the decrease in the total consumed power is suppressed is better than the one for the battery caused by the decrease in the total consumed power.

Goodnow teaches power management for a portable computer having a battery and controlling the operation of multiple execution units based on the total power consumption, similar to applicant's invention (column 2, line 58 – column 3, line 18).

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Goodnow further teaches optimization of the battery efficiency and enhancing the battery's life by maintaining constant load on the battery (column 7, lines 18-22). Thus, in addition to reducing the total power by deactivating different functional units for optimizing the battery efficiency, during low periods of operations, additional functional units are enabled to maintain constant load level for the battery (column 7, lines 23-30). Thus, the decrease in consumption of power (regulated by selectively disabling different functional units) is based upon whether such action benefits the battery condition. In Goodnow, the above described apparatus and method allow for dynamic power management thus, optimizing the battery's efficiency, while maintaining the life of the battery.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the above described apparatus and method, as suggested by Goodnow with the apparatus disclosed by Odaohhara in order to implement the consumed power to be changed only when a power-saving effect for a battery when the decrease in the total consumed power is suppressed is better than the one for the battery caused by the decrease in the total consumed power. One of ordinary skill in the art would be motivated to do so in order to optimize the battery's efficiency and prolong its life.

Allowable Subject Matter

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 6, the prior art of record fails to disclose or suggest all the subject matter of claim 6, wherein the device controller has a controlled state administration table carrying information on a content of operation and a permissible lapse of time of an operation following the control-command for each of at least some of the one or more devices, and if a lapse of time after some content of operation was changed into an operation following the control-command exceeds the corresponding permissible lapse of time, then prohibits the power-save determinator from outputting the control command corresponding to the some content of operation".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Stoyanov whose telephone number is (571) 272-4236. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS



REHANA PERVEEN
SUPERVISORY PATENT EXAMINER
5/29/07